

PHS POLICY ON HUMANE CARE AND USE OF LABORATORY ANIMALS CLARIFICATION
REGARDING USE OF CARBON DIOXIDE FOR EUTHANASIA OF SMALL LABORATORY
ANIMALS

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NOTICE: NOT-OD-02-062

National Institutes of Health (NIH)

The Office of Laboratory Animal Welfare (OLAW) has determined a need to issue Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS Policy) guidance to Assured institutions clarifying current requirements regarding the use of carbon dioxide (CO₂) as a euthanasia agent for small laboratory animals. Guidance regarding prompt reporting of related serious noncompliance is included.

The Animal Care unit of the Animal and Plant Health Inspection Service, U.S. Department of Agriculture, has reviewed and concurs with this guidance as it relates to USDA-covered species.

BACKGROUND

PHS Policy (<http://grants.nih.gov/grants/olaw/references/phspol.htm>) requires Institutional Animal Care and Use Committees (IACUCs) to determine that methods of euthanasia utilized in research proposals are consistent with the Report of the American Veterinary Medical Association Panel on Euthanasia (<http://www.avma.org/resources/euthanasia.pdf>) (AVMA Panel Report), unless a deviation is justified for scientific reasons in writing by the investigator. IACUC approval of such deviations must be project-specific and include critical review of assertions of scientific necessity. IACUCs may not otherwise disregard or issue blanket waivers of applicable AVMA Panel Report recommendations.

Applications and proposals for awards submitted to the PHS must contain, among other things, a description of procedures designed to assure that discomfort and injury to animals will be limited to that which is unavoidable in the conduct of valuable research. Reliance on this overarching principle of minimization of pain and distress is especially useful in resolving apparent inconsistencies and gaps in the scientific literature and the specific guidance on CO₂ use.

CLARIFICATION CONCERNING USE OF CARBON DIOXIDE

Although CO₂ is generally considered an acceptable euthanasia agent for small laboratory animals when properly administered, its acceptability is predicated on the following:

- o High concentrations of CO₂ may be distressful to some species. Accordingly, pre-filling the chamber is recommended only under circumstances in which such use has not been shown to cause distress. While conclusive data are not available for all species, IACUCs and veterinary staff should keep abreast of current peer-reviewed scientific literature and apply informed professional judgment to the design of institutional policies for CO₂ delivery systems and procedures, keeping in mind the imperative to avoid or minimize discomfort, distress, and pain when consistent with sound scientific practices.
- o Death must be verified after euthanasia and prior to disposal. Unintended recovery must be obviated by the use of appropriate CO₂ concentrations and exposure times or by other means. OLAW notes that thoracotomy after apparent death from CO₂ is one way to ensure the irreversibility of the procedure.
- o Institutions must ensure that all individuals responsible for administering CO₂ euthanasia are appropriately qualified and monitored, and that they adhere to IACUC-approved protocols and institutional policies.
- o Chambers must not be overcrowded. In this regard, it is important to also consider that mixing unfamiliar or incompatible animals in the same container may be distressful.
- o Compressed CO₂ in cylinders is the only AVMA Panel-recommended source of CO₂ for euthanasia purposes.

REPORTING OF NONCOMPLIANCE

Unintended recovery of animals after apparent death from CO₂ (e.g., in necropsy coolers) is a documented occurrence. Institutions are reminded that such incidents constitute serious noncompliance with the PHS Policy and serious deviation from the provisions of the Guide for the Care and Use of Laboratory Animals (<http://www.nap.edu/readingroom/books/labrats/>). As such, the IACUC, through the Institutional Official, must promptly provide OLAW with a full explanation of the circumstances and actions taken. Prompt reporting in accordance with PHS Policy requirements (PHS Policy IV.F.3) is an essential component of the formal relationship between OLAW and PHS-Assured institutions.

OLAW advises IACUCs to review their policies and practices regarding CO2 euthanasia of small laboratory animals and take appropriate action as needed to conform to this guidance.

INQUIRIES

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